Part IIB guide

Supplementary information will be issued in the Lent and Easter terms and in the termly briefing notes.

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Part II aims & objectives

Teaching aims

The aims of Part II of the Engineering Tripos are to encourage and enable students to:

- specialise in considerable depth in a chosen area of engineering;
- acquire up-to-date knowledge and understanding of theory and practice in a chosen area of engineering, in an atmosphere informed by research;
- continue to develop skills in modelling, analysis and problem solving;
- develop creativity, synthesis and design skills, and the ability to create engineering design solutions;
- design and evaluate experiments and computer software;
- continue to develop communication, teamwork, management and leadership skills;
- develop an awareness of the international role of the engineer;
- develop the facility for independent learning, open-mindedness, and the spirit of critical enquiry;
- develop the ability to tackle unforeseen technical and management demands and to apply new technologies in novel situations with confidence and competence;
- develop their full potential as innovators and future leaders in industry, the professions, public service, academic teaching and research.

General objectives

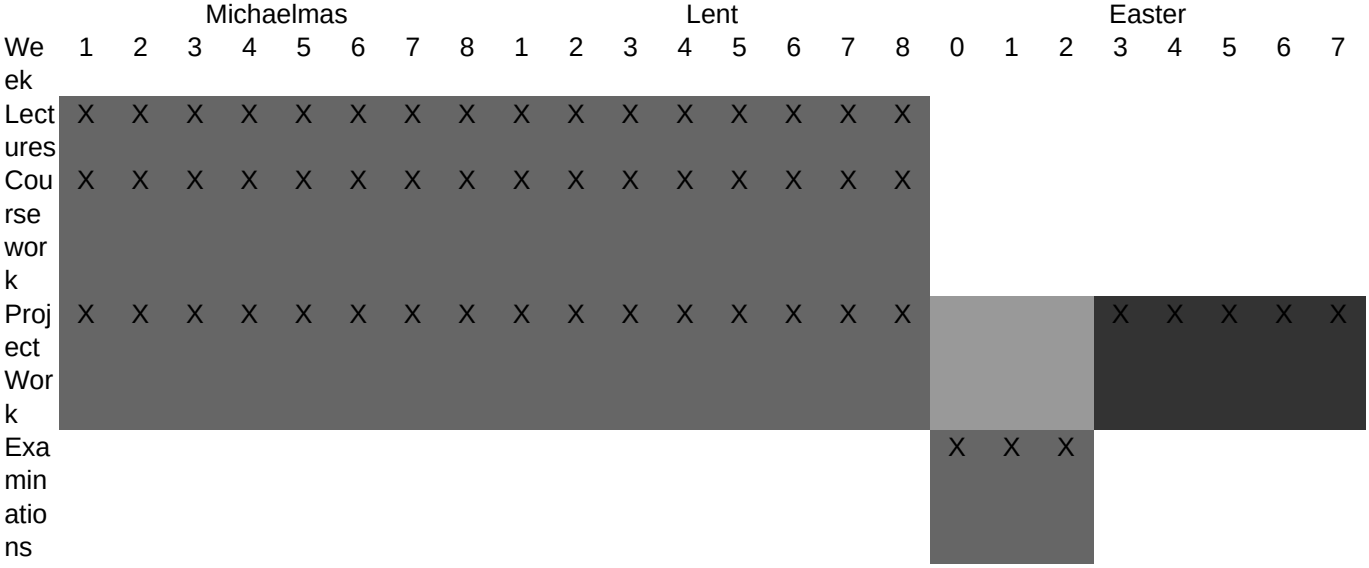
At the end of Part II undergraduates should:

- by means of lecture courses, associated course requirements, examples papers and appropriate reading have gained an understanding in depth of engineering science in specialised areas;
- have progressed further with all but the first of the general objectives for Part I of the Engineering Tripos;
- by means of team projects have developed cooperative, management and communication skills as well as practical professional knowledge;
- by means of a major project in either design or research have developed creativity, innovation and a capacity for independent learning and enquiry.

The progress of each undergraduate is measured by Tripos examinations and by assessed coursework. Tripos classes and details of marks are notified to undergraduates through CamSIS or by their Colleges, and progress with coursework is communicated by staff marking individual coursework activities.

Detailed objectives for each element of the course are given with the syllabuses for each series of lectures and with the instruction sheets for coursework.

Balance of work



Modules

Introduction

Part IIB is based around a flexible modular scheme, in which strong specialisation is possible. About 75 modules are available, from which you choose eight. Most opt for four in each of the Michaelmas and Lent terms, but this is not a requirement. If you do wish to take an unbalanced selection, it is usually preferable to undertake the greater share in Michaelmas (e.g. 5:3), since past experience shows that project pressure tends to be higher in the Lent term. The decision is also influenced by the coursework load of your modules. You are advised to discuss your choice with your director of studies, particularly if it is not a balanced selection of 4 in each term.

Each module has 16 timetabled slots, in the Michaelmas or Lent term (with the exception of a small number of vacation modules). Exam-only use all 16, including examples classes; this is reduced to 12-14 slots for 25% coursework modules. Coursework modules use as many of the 16 slots as are appropriate to cover the course, including coursework briefing. The nominal workload per module is 40 hours in total (including revision, exams and coursework, as applicable). All module examinations are held in the first three weeks of the Easter term.

NB. There are **no supervisions** for Part IIB modules, only examples classes.

Assessment

Module assessment is of three types:

- 100% exam;
- 75% exam + 25% coursework;
- 100% coursework.

All Part IIB exams are of 1.5 hours duration and are held at the start of the Easter term. Dates for specific modules will be posted online during the Lent term.

See the information about marking & classing criteria for information about how Part IIB is classed.

Groups

The Faculty Board's list of modules & sets is published in May for the following academic year and is subdivided into Groups A to G, I and M, as in Part IIA, with the addition of Group R. The number of modules in each of Groups A-G will normally be not less than six and not more than ten, although the number and the topics covered will vary slightly from year to year.

Note that the modules available may vary slightly from year to year.

Group A	Energy, fluid mechanics and turbomachinery
Group B	Electrical engineering
Group C	Mechanics, materials and design
Group D	Civil, structural and environmental engineering
Group E	Management and manufacturing
Group F	Information engineering
Group G	Bioengineering
Group I	Imported modules *These modules are offered by other Departments or other courses within CUED.*
Group M	Multidisciplinary modules *This group includes the **surveying field course** (which takes place in the summer vacation preceding Part IIB), **mathematical modules**, and **foreign language modules** (which lead on from language skills developed in the Part IIA Easter term language projects).*
Group R	Research modules (available to students who have been classed with a First at Part IIA of the Tripos) *These modules are of interest principally to those wishing to pursue a career in research.*

Rules and restrictions

Please refer to the Faculty Board list of modules and sets for the definitive list . Guidance on module choices for students wishing to qualify in particular engineering areas can be found here. There are also conditions specific to professional institutions accreditation.

Other considerations:

- modules may be further restricted as indicated in the ‘Special Conditions’ section at the top of the syllabus;
- by arrangement with the Faculty Board you may choose to submit a dissertation of 4,000 – 5,000 words in place of one module.

Ballots and special conditions

If numbers are particularly high for any module, the need for a ballot will be announced at the first timetabled period.

Language modules

Students who wish to take a language module in Part IIB must make a binding commitment to take 4M1 French, 4M2 German, 4M3 Spanish or 4M4 Japanese when they enter their preferences in COMET towards the end of the Easter term.

When COMET closes on the the last day of Full Term in June all language module selections will be locked. It will **not** be possible to change them either at the start of the Michaelmas term or at the start of the Lent term.

Module 4A4 (Aircraft stability and control)

The flight test course associated with 4A4 has a limit of 30 participants, so a ballot may be necessary. The module can, however, be taken without going on the flight test course. Please also note that the first 4A4 lecture will be a briefing session only (lectures start in week 5). Attendance at the briefing is essential; if you are forced to miss it, contact the course leader by the end of week 1 at the latest.

Module 4I1 (Strategic valuation)

This module will be given as a 3-day workshop the week **after** the end of Michaelmas Full Term, provisionally timetabled 9am-5pm from 7-14 December 2015. Details are on the syllabus. Please ensure you will be available for **all** of these days before signing up for this module.

The number of 4I1 places available to Part IIB Engineers is limited. Students who have not taken 3E3 will be given priority. The names of students wishing to take this module will be extracted from COMET, and a ballot will be held if the module looks likely to be oversubscribed. The ballot will take place on 10 October, after which the Teaching Office will be in touch with any unsuccessful applicants to ask them to select another module.

Module selection on COMET

You are required to log on to COMET to make a provisional selection of your Part IIB modules in the last two weeks of the preceding Easter Term. You will be able to make changes to your selection at the start of the Michaelmas term (and further changes to Lent modules until January), except for 4M9 and any language options.

Your selection must be finalised each term by midnight on Wednesday of week one. Shortly after each deadline, you will confirm your selection for that term as a binding exam entry that may not subsequently be changed or discounted (i.e. after the Michaelmas deadline you will **not** then be able to discount any module for which you were entered in the Michaelmas Term).

Modules are offered subject to demand. If the numbers for any module are very low it may be withdrawn or given as a directed reading module rather than as a taught course.

Although you are not required to finalise your choice of modules straight away it is important, if at all possible, to attend the first timetabled period of any module of interest since it is then that the leader will give a general description of its content.

COMET will notify you if your module choices are invalid or do not fit into your chosen engineering area, in which case you must revise your selection.

Module administration

Queries about particular IIB modules should be addressed to the module leader in the first instance (as detailed in the syllabus).

Procedures regarding IIB coursework hand in (Coursework Candidate Numbers)

All IIB coursework is marked anonymously, and each student is given an individual coursework candidate number (CCN). It is **your responsibility to enter your CCN onto the coversheet.** You will be able to access this number on COMET

Please ensure that your name does not appear anywhere on the coursework.

Coursework hand-in contacts

Locations for handing in IIB Module reports

4A…	Ms W Raymond	Post box outside room BE2-03, 2nd floor Baker Building
4B…	Mr D Gautrey	EIETL, 2nd floor Inglis Building
4C…	Ms C Whitaker	Room BE3-39, 3rd floor Baker Building
4D…		Structures Lab, ground floor, Inglis Building
4E…	Mrs M Wilby	Teaching Office, room BEO-04, Office floor, Baker Building
4F…	Mrs L Reed	Room BNO-37, Office floor, Baker Building
4G…	Mr D Gautrey	EIETL, 2nd floor Inglis Building
4I…	Mrs M Wilby	Teaching Office, room BEO-04, Office floor, Baker Building
4M (language modules)	Mrs L Morrow	Language Unit, Baker South Wing, 2nd floor
4M (non-language modules)	Mr D Gautrey	EIETL, 2nd floor Inglis Building

Related forms

- Coursework coversheet
- Submission form for external examiners

Part II exam period, location & timetable

General information

Exams for Part II modules begin on the Monday of week 0 in the Easter term and end not later than the Wednesday of week 2. In 2016 the Part II exams will take place in the Department. MET IIA exams will take place at the IfM.

The exam timetable (http://www.admin.cam.ac.uk/students/studentregistry/exams/timetable) will be posted online and on the exams noticeboard in the Inglis corridor before the end of the Lent term.

Part IIA overview

Single modules (16 lectures) are each assessed by a 1.5-hour examination and double modules (32 lectures) by a 3-hour examination.

The total available credit for examinations is 600 marks (which is added to your coursework total, where the maximum available is 240). For further information see the Part IIA exam and coursework credit notice.

Part IIB overview

Each module is marked out of 60, and your total out of the 480 marks available is added to the marks for your project, for which 360 marks are available. For further information see the Part IIB exam and coursework credit notice.

All written examinations are of 1.5 hours' duration, whether they count for 100% or 75% of the module credit.

Project assessment overview & submission dates

Assessment overview

Assessment of your project work is based on the following elements:

Element	Credit	Timing/deadline
Michaelmas term presentation	20	Michaelmas term, week 7 or 8
Michaelmas term progress and industry	20	Michaelmas term, Friday weeks 5 and 9
Technical milestone report	40	Lent term, Thursday week 1
Lent term progress and industry	20	Lent term, Friday weeks 5 and 9
Technical abstract and final project report	200	Easter term, Wednesday week 5
Easter term presentation	40	Easter term, week 6 or 7
Overall progress and industry	20	Throughout year

The total credit available is 360.

It is important to maintain a steady work-rate throughout the year. **Progress and industry** marks are allocated on the basis of four half-termly meetings in Michaelmas and Lent, and also according to your supervisor's year-end judgement of your overall approach. The half-termly assessments will typically be made during a normal project meeting. Feedback will be provided via e-mail, within 48 hours. It is **your responsibility** to ensure that the progress review meetings are arranged by the associated deadlines, giving your supervisor at least a week's notice. If you have good cause for postponing a meeting beyond its deadline (e.g. due to illness), you must request an extension from the Teaching Office using the allowance form.

If you are working in **collaboration** with another student or as part of a team, you must nevertheless write your own reports. If there are results obtained jointly, it is acceptable for you to present copies of graphs and tables produced in collaboration, suitably referenced. The text of the reports must be your own. In summary, the golden rule is that

"the Examiners must be in no doubt as to which parts of your work are your own original work and which are the rightful property of someone else".

Your **logbook** (or electronic equivalent) is not assessed as a separate item, but you must submit it together with the two copies of your final report. It will be taken into account when a mark is allocated for the report by the assessor. An extra copy of **your technical abstract** is to be submitted with the two copies of your final report and this will be archived for reference by future staff and students.

Submission dates for 2015-16

1. 4pm on Thursday 14 January for the technical milestone report (two copies);
2. 4pm on Wednesday 25 May for the technical abstract (three copies), final project report (two copies) and logbook (or electronic equivalent).

These documents should be handed in to the group centre. They will be date-stamped and automatically passed on to your supervisor and assessor for assessment.

One copy of your technical milestone report and one copy of your final report is kept by your supervisor. The second copy and the project record are held until after the meeting of the Part IIB examiners. The Teaching Office will schedule a couple of sessions where you can collect your project work should you wish to keep it. Please liaise directly with the Teaching Office at the time you hand in all your coursework. All unclaimed copies will be destroyed at the end of summer.

Project group centres

Detailed guidance in your project work is primarily the responsibility of your supervisor. However, overall control within each group is in the hands of a Group Coordinator. Much of your day-to-day contact will be with the group centres, which provide a channel for communication and source of information for both students and staff. You should familiarise yourself with the details and routine practices of your group early in the year in order to maximise the support on offer and to avoid confusion over handing in times, etc.

Overall project coordinator: Dr Andrew Gee

Group A – Thermodynamics and fluid mechanics

Coordinator: Chief technician: Administrator:	Prof Bill Dawes Mr Roy Slater Mrs Kate Graham
Group centre:	Hopkinson lab, ground floor, Inglis building
Noticeboard:	Between rooms 203 and 208, second floor, Baker building

Group B – Electrical engineering

Coordinator: Chief technician: Administrator:	Dr Paul Robertson Mr Dave Gautrey, and Mr Mike Brown Mrs Sue Frost
Group centre:	EIETL, second floor, Inglis Building

Noticeboard:	West end of the EIETL, to the left of the main aisle

Group C – Mechanics and materials

Coordinator: Chief technician: Administrator:	Dr John Durrell Mr S Savage Miss Claire Whitaker
Group centre:	Mechanics of machines laboratory, ground floor, Baker building (entrance via central roadway)
Noticeboard:	North corner of lab (i.e. by roadway entrance)

Group D – Civil, structural and environmental engineering

Coordinator: Chief technician: Administrator:	Prof Abir Al-Tabbaa Mr Martin Touhey Ms Jen Flack
Group centre:	Structures lab, ground floor, Inglis building
Noticeboard:	Mezzanine floor, Inglis building

Group F – Information engineering

Coordinator: Chief technician: Administrator:	Prof Jan Maciejowski Mr Dave Gautrey, and Mr Mike Brown Mrs Laura Reed
Group centre:	EIETL, second floor, Inglis building
Noticeboard:	West end of the EIETL, to the left of the main aisle

Project selection procedure

Your project can be either:

(a) one that is suggested by a member of staff of the Department, or

(b) one that you propose yourself and is then approved by the Department.

There is no onus on you to think up a type (b) project, and you should find plenty to interest you amongst the type (a) projects. Type (b) projects are most likely to arise when sponsored students wish to work in areas suggested by their companies.

Type (a) projects

A list of type (a) projects will be available on the departmental computer system (via COMET) from Tuesday 12 April. If you are not proposing a type (b) project, you are expected to **choose three from the type (a) projects offered, stating an order of preference**. The deadline for submitting choices is midnight on Friday 13 May, but you are strongly advised to find out more about the projects whose titles you find of interest well before this date.

Four points to note:

1. It is not necessary for you to work on a project which is related to your own engineering area. However, accreditation by some of the professional engineering institutions may depend upon your project having a technical content lying within the interests of the institution. See your Director of Studies for advice.
2. With some supervisors, more projects are listed than can be taken up. Those which remain finally on offer depend on which projects attract student interest.
3. Some projects are subject to confidentiality restrictions: these are indicated clearly on COMET. If you are considering applying for such a project, you should make sure that you are fully aware of the nature of the confidentiality issues by discussing them with the supervisor. Where no confidentiality issues are flagged, you may safely assume that you will be able to write freely about all aspects of your project work, discuss what you have done with potential future employers, and present your work in public.
4. Some projects have two supervisors listed, and in such cases it is the first of the two who should be contacted.

When you find a project which is likely to be one of your preferences, **you should make every effort to contact the supervisor and discuss it with them**, especially if you want it to be your first preference. Note that, in due course, the supervisor may have to choose between you and other students who wish to undertake that project. There may be a need for you to persuade them that you are the best choice.

Students in the past have found that supervisors are reluctant to choose them for a project if a face-to-face meeting has not been arranged prior to the allocation process. It is therefore very important to meet prospective supervisors and discuss possible projects before selecting those projects as your choices.

Preferences are to be entered onto COMET between Monday 2 May and Friday 13 May. During this period, each online project description will be accompanied by a facility for submitting it as a preference. Enter whether it is to be first, second or third choice and then click on submit. Remember that the allocation of projects is not done automatically by computer, but by the staff in consultation.

Members of staff also have the option to pre-allocate projects if they have seen enough students to make a reasoned choice. Pre-allocation may happen as early as anyone wants, but not after Tuesday 10 May and requires a signed agreement form to be delivered to the relevant Group Secretary **by 2pm on Friday 13 May.**

After submitting preferences, it is still possible to amend them up until midnight on 13 May simply by submitting new ones (the old will be overwritten). A ‘‘first allocation’’ list of students to whom projects are assigned will be posted in the Baker building foyer and at group centres on Friday 27 May. If you have been unlucky and it has not been possible to assign you one of your preferences, you should contact the coordinator of the group that is of most interest to you as soon as possible. They will assist you in finding an alternative project.

NB. It is **your responsibility** to register for a project before the end of the Easter term.

Type (b) projects

If you wish to do a type (b) project, you are strongly advised to submit the proposal form as early as possible, preferably before the end of the Lent term, to allow time for suitable supervision to be arranged. If your proposal is not accepted by a member of staff, acting this early will also leave you with plenty of time to choose a type (a) project instead. Be aware that projects with significant confidentiality issues are unlikely to attract a willing supervisor.

To propose a type (b) project, you must contact the coordinator of the group which covers the field of the project, discuss your ideas with them and submit your proposal form by Tuesday 19 April at the latest. The coordinator will decide whether the project is a suitable one and determine whether there is a member of staff willing to act as supervisor. All projects must have a departmental supervisor. The coordinator will contact you as soon as possible.

If a suitable supervisor **is not available** within the department, you cannot do the type (b) project proposed. You should now choose a type (a) project instead (see above).

If a suitable supervisor **is available** within the department, the coordinator will tell you his/her name. You should contact the supervisor and complete the project agreement form together.

If the project is approved or seems likely to be approved, it is your responsibility to enter a record of the proposed project during the period beginning Monday 2 May and ending Friday 13 May. This should be done by logging on to COMET and following instructions on the screen for submitting type (b) projects. The screen will ask for: project title, industrial sponsor (if any), supervisor's name, the group it will be associated with and a brief (100 word) amplification of the title.

Actions for all students

By Friday 13 May **all** students must have submitted preferences. You must keep to this deadline in order not to be disadvantaged in the initial allocation. As the final allocation is settled by discussion among staff and not by computer, you are advised to contact the supervisors of your selected projects before 13 May, so that you can both be clear about all aspects of the project.

Once your type (a) or type (b) project has been determined, you are responsible for arranging to see the supervisor so that the project agreement form is completed by **both** of you. **You** should then hand in the form to the Teaching Office by Friday 3 June. Please contact Mary Wilby if you have a problem in doing this. Please make sure that you include the project reference number - for example, A-GTP-1, or A-GTP-type(b) etc - on your form.

Before the end of the Easter term, you and your supervisor should meet (possibly at the same time as that arranged for completing the project agreement form) in order to draw up an initial plan for the project work and to discuss long vacation work (industrial or preliminary).

Part IIB project introduction for Part IIA students

Summary

Roughly half of your final year will be spent working on a major individual project of your own choosing. The project will usually involve design, research and/or computer work at a high technological level on a topic of practical relevance. There are two types of fourth year project, either of which may involve collaboration with an industrial company:

- **Type (a)** are offered by staff and cover a wide range of areas relating to their research interests.
- **Type (b)** are projects that you propose yourself, which may then be approved by the Department. Any such project must be approved by the Coordinator of the appropriate Group, and a member of CUED staff must be willing to act as supervisor. Arrangements to undertake this type of project should begin during the Lent Term of Part IIA.

Your project is a very important part of the final year and is expected to take up roughly half your working time throughout the whole of that year. Given the amount of effort involved, it is essential that you find a project which will engage your interest. A good project will be one that stretches your ability in the skills which you have acquired on the Cambridge engineering course and will give you opportunity to show initiative in more than one area of engineering activity, such as experimentation, design, computing or analysis.

For detailed information see:

- Part IIB project selection procedure
- Part IIB project importance, overview and aims

Important landmarks in the project period

- **Lent and Easter terms (Part IIA)** - Details of type (a) projects will be posted on COMET. During the first part of the Easter Term, you will be asked to look through and discuss the projects of interest to you with the members of staff offering them. You will then enter a provisional selection of 3 projects in order of preference into the allocation procedure. Remember, early action is especially necessary if you wish to propose your own project (type (b) projects).
- **Long vacation between Parts IIA and IIB** - for some industry-linked projects, there may be investigations at an industrial site. Background reading and preparation should be undertaken by all students: ask your supervisor for some suitable preparatory work so you can hit the ground running in October.
- **Michaelmas term (Part IIB)** - you will be required to keep a log book or equivalent electronic record, which will be checked regularly by your supervisor. Its content may be taken into account in the assessment of your project. There will be credit available for progress and industry throughout the year.
- **End of Michaelmas term (Part IIB)** - you will be required to give a 10-minute presentation to staff and other project students, explaining what the project is about and how much progress has been made. The presentation is assessed.
- **Start of Lent term (Part IIB)** - the technical milestone report (TMR) is submitted. This is a formal report, on not more than 6 sides, produced to camera-ready standards. It gives details of the progress on the project to date, the results obtained and presents plans for the remainder of the work.
- **Middle to end of Easter term (Part IIB)** - the final project report and a technical abstract are submitted. You will also be required to give a 10 minute presentation focused on the most significant aspects of the project work. Guidance notes on the form to be taken by the report and the presentations will be issued during the Michaelmas term.

Project final report

Technical abstract

The final report must begin with a technical abstract of not more than 2 pages in length. This should be designed as a self-contained document and should provide a concise overview of the report structure and the key features of your work (e.g. the problem being addressed, techniques used, main results, and conclusions).

NB. as well as being submitted as part of your final report, you will be required to submit a separate copy of your technical abstract, which will be archived by the Department. Thus it is important that you include your name, College and project title in your abstract.

Risk assessment retrospective

Your report should include a brief appendix (maximum one side of A4) commenting on the risk assessment you submitted to the Safety Office at the start of the Michaelmas term. How well did this reflect the hazards actually encountered during the course of the project? In retrospect, how might you go about assessing risk differently if starting the project again?

Style

The final report should not exceed 12,000 words or 50 A4 pages, including figures and appendices (but not counting the title page and technical abstract). It should be double-sided if at all possible, typed in 12 point at one-and-a-half line spacing. Margins are to be approximately 25mm all round. You may use colour for diagrams etc. if you so wish. You will need to submit **two copies** – departmental photocopying machines may not be used for

making the second copy.

A copy of the standard departmental coversheet is available as a word document on line.

Students should make sure that they fill in all the information and sign/date the declaration at the foot of the coversheet.

Planning the report

Leave plenty of time for writing-up. A good plan would be to produce a first draft before the module examinations commence at the start of the Easter Term. Your supervisor can then read the draft while you are doing the examinations and meet you to provide feedback immediately the examinations end.

Before you start writing, it is essential that, from the start, you have a clear view of the technical level at which the report should be pitched. Remember that you are writing for two readers:

1. your **project supervisor**, who should know the aims and the technical background of your project; and
2. an **assessor**, who will know something about the subject area (e.g. an information engineering report will not be examined by a lecturer in structures), but will not be familiar with details. i.e. **do not fill the report with elementary theory** and descriptions of standard processes.

There are no set rules for how a technical report should be structured and the pattern may depend on whether the work being reported is theoretical, experimental, computational or on design. What is certain is that you must have a technical abstract, an introduction and conclusions. Between the introduction and conclusions, the theme of the report should be developed in the manner which you judge to be most clear and logical. Where appropriate, sustainability implications of the project should be considered and reported. A typical plan for a report on an experimental project might be:

- **Technical abstract**
  A self-contained summary in not more than 2 sides. Write this last.
- **Introduction**
  An important section in which you can point out what has been done before and put the project into context. Many students seem to confuse introduction and summary. In this section you explain why you are doing the work. If you don't know, ask your supervisor.
- **Theory and design of experiment**
  Explain the assumptions behind the theoretical development you are using and the application of the theory to your particular problem. Any heavy algebra or details of computing work should go into an appendix.
- **Apparatus and experimental techniques**
  This section should describe the running of the experiment or experiments and what equipment was used, but should not be a blow by blow account of your work. Experimental accuracy could be discussed here.
- **Results and discussion**
  This could be split into two separate sections but it may be easier to present the results and your discussion of them in the one section. This is the most difficult part of the report: you must present the results, interpret them and compare them with any theory or other published results.
- **Conclusions**
  This should contain the main findings and possibly ideas for future work.
- **References**
  List the sources of information which you have quoted in your background material, theory, or experimental methods in sufficient detail for anyone else to find the sources in the library.
- All **figures and graphs** in the report should be clearly labelled with figure numbers and captions. Make sure that you show scales and label the axes on all your graphs.

You may find the CUED Guide to Report Writing helpful.

Computer-program listing

In the same way that it is a mistake to include in a report every detail of standard experimental procedures, it is inappropriate to reproduce an entire computer program, which will inevitably contain much which is of small intrinsic interest. If there are elements in a program which are novel, these should be selected for proper discussion in the text.

It may well be that your supervisor will want to keep a record of the program, but this should be done separately. It may also be appropriate to include computer code as part of the project record; your supervisor can advise on this.

Writing the final report

You should expect to make at least one and probably more revisions to your first draft. So, **make sure that you complete that draft well before the deadline**. Then leave it for a few days and read it through. Does it make sense? Make your revisions and prepare the final version.

If you are using departmental facilities for word processing, note that you may have to share with other users. In particular, the Part IIA Easter term projects start before the submission date of your report and at certain times the Part IIA projects have priority.

If you are using your own computer for word processing, be careful to **keep plenty of backup copies** of your work. Computer failure is **not** an acceptable excuse for handing in your report late, and if you fail to hand in your main report, you will fail the MEng.

Assessment of the final report

The following criteria will be considered in the assessment:

A. Effort:

- Practical skill in experimental, computational, design or theoretical work.
- Diligence.
- Persistence in overcoming difficulties and achieving objectives.

B. Achievement:

- Appreciation of significance of project.
- Competence in planning attack on problems.
- Initiative and generation of ideas.
- Ingenuity and perspicacity.
- Deductive power and judgement.

C. Communication:

- Overall planning of the account - the logic of its development.
- Clarity of technical abstract.
- Clarity of main text and analysis.
- Quality of language, readability, freedom from errors.
- Clarity of diagrams and graphs.

Feedback

Feedback on the marking of the final report is provided by the project supervisor on request. Marks are never released at this stage.

Archiving

There is no central archive of final reports, although individual supervisors may keep a copy of their students' work. Copies of technical abstracts will be collected at the time of the submission of final reports and archived by the Department after the projects are finished. They will then be available in the departmental Library for consultation by staff and students in future years.

Project deadline problems

Illness

If you are unable to attend for a presentation/progress review meeting or cannot submit a report because of illness or other grave cause, you should notify your supervisor immediately. If your supervisor recommends it, you should complete a coursework allowance form. This form has sections for both you and your Tutor to complete before it is returned to the Teaching Office for consideration by the Director of Undergraduate Education.

In the case of a missed presentation/meeting, every effort will be made to reschedule it. In the case of a report you may be required to submit to the Teaching Office what notes, drafts, etc. you have available, so that as fair an allowance of marks as possible can be made.

Penalties

The time staff have for marking project reports can be short, so failure to meet submission deadlines for no good reason is treated seriously.

5 marks per day will be subtracted for each day that a report is late. Normally, reports will not be accepted if more than two days late.

Up to 20 marks may be deducted for infringement of the rules on length in the case of a report.

Plagiarism avoidance in projects

It is self-evident that research-based project work requires extensive discussion and cooperation with your supervisor and others. However, all reports and presentations must document the individual work of the author, with specific reference being made to any material taken from another source (including concepts, theories, equations, figures, or computer code, whether published in the open literature or on websites, or unpublished work obtained by other means). Failure to reference the work of others is cheating and will be penalised.

You must read the Department's information about plagiarism, cooperation & cheating.

Accreditation of the MEng

All students are encouraged to become student or affiliate members of one or more of the professional institutions.

Introduction

Most students reading Engineering at Cambridge will at some stage consider becoming professional engineers, and many will be firmly intending to do so. The engineering profession as a whole is currently supervised by the Engineering Council (UK). There are a number of chartered institutions or similar bodies, each concerned with a particular branch or type of engineering. Corporate membership of the appropriate institution is the professional qualification for that branch of engineering, and carries with it the title of Chartered Engineer.

A Cambridge Master of Engineering degree (MEng), with the appropriate choice of modules in Part II, provides exemption from part or all of the examination requirements at all the principal institutions (although a number of years of practical training and responsible experience are also required for corporate membership). See below for conditions of exemption for each institution.

The institutions welcome enquiries from engineering students and will supply, on request, information about careers and reading lists. Undergraduates may apply for student membership of any of the institutions listed below. Student membership is generally free and entitles the student to receive certain publications and to attend meetings organised in all parts of the country.

Accrediting bodies and CUED institutional liaison officers

All the four-year MEng courses offered by the Department of Engineering are accredited by one or more of the following institutions, depending on the engineering area studied. More details, including application forms, relating to membership of individual institutions can be obtained from the institutions' websites or from the appropriate liaison officer:

Acronym	Institution	Liaison officer
ICE	Institution of Civil Engineers	Dr RA Fenner
IStructE	Institution of Structural Engineers	Prof CJ Burgoyne
IMechE	Institution of Mechanical Engineers	Prof N Collings
IET	Institution of Engineering and Technology	Prof A C Ferrari
RAeS	Royal Aeronautical Society	Prof WN Dawes
InstMC	Institute of Measurement and Control	Prof JM Maciejowski
CIHT	Chartered Institution of Highways and Transportation	Dr CJ Burgoyne
IHE	Institute of Highway Engineers	Dr CJ Burgoyne
IPEM	Institute of Physics and Engineering in Medicine	Dr GM Treece

The MEng course is also recognised by the European Network for Accreditation of Engineering Education (ENAEE) as meeting the requirements of a “second cycle” European accredited engineering programme. In essence, this means that it meets the European standard for a Master’s degree.

Conditions of exemption

Institutions	Conditions of exemption
All Institutions:	Students must complete two management modules (which includes those in Group E plus '4I1: strategic valuation') during the final two years of the MEng course.
CIHT, IHE, ICE and IStructE:	The MEng is accredited as fully satisfying the educational base for a Chartered Engineer (CEng) with the same requirement of two management modules being taken in Part II. For the purposes of accreditation, '4D16: construction and management' can be counted as one of the two management modules.

Institutions	Conditions of exemption
RAeS, IMechE and IET:	The MEng is accredited for all engineering areas.
InstMC:	The MEng is accredited for the instrumentation and control engineering area. Other engineering areas are also accredited provided that at least two of the following modules are taken: • 3F1: signals and systems • 3F2: systems and control • 4F1: control systems design • 4F2: robust multivariable control • 4F3: nonlinear and predictive control
IPEM:	The MEng is accredited for students who take the bioengineering engineering area in both Part IIA and Part IIB.

The Engineering Council

Graduates in Engineering, who are Corporate Members of one of the Engineering institutions above are invited to register with the Engineering Council to achieve Chartered Engineer status (CEng). This is usually acquired by application through the particular institution at the time of acceptance as a Corporate Member.

Students may like to become involved with the various activities of the Engineering Council which promote engineering among young people.

European-Accredited Engineering Programme

The Engineering Tripos (MEng) has been designated as a second cycle European-accredited engineering programme within the EUR-ACE system

Inclusive teaching

The Equality Act (2010) requires higher education institutions to take positive steps to make their education accessible to disabled students and to make 'reasonable adjustments' to provision to ensure that disabled students are not disadvantaged. Disabilities may include physical or mental impairments: the majority of these students have specific learning difficulty (SpLD) in the form of dyslexia. Cambridge University Disability Resource Centre has some standard recommendations for appropriate academic support for such students. Further provision may be required in particular cases.

In an organisation of our size and complexity, individual variations in provision are potentially disruptive. However, many of the suggested adjustments are just good educational practice, so represent things we should be doing anyway as a Department that takes pride in the excellence of its teaching. Indeed, we already follow many of the recommendations (e.g. provision of cribs). The approach we have adopted is therefore to aim to have inclusive standard procedures for all teaching activities. Students are expected to make use of available resources to suit their needs, and to contact staff themselves (e.g. lecturers, lab leaders) if additional material is required.

Link to list of IA lecturers, IB lecturers and lab leaders for IA and IB.

Contact details of part II lecturers can be found on the relevant syllabus pages.

Any enquiries should be addressed to the CUED Director of Undergraduate Education.

The following recommendations have been agreed by the Faculty Board (12 November 2012):

- Electronic versions of handouts should be made available on-line 24h in advance of lectures or other teaching sessions (e.g. labs). [This allows students who do have special requirements to produce their own customised hard copy if they wish: e.g. single-sided; large format; non-white background].
- Filled-in versions of notes should be made available on-line after lectures.
- Recording lectures (audio) is often recommended to students as a learning aid. They must sign an agreement to use the recording only for their own personal study, and acknowledging IP and copyright. The agreement form can be found here, and students are asked to provide the Teaching Office with a copy. Lecturers are asked to consent to their lectures being recorded under these conditions. A list of students who have completed agreement forms can be made available on request.
- In labs, instruction should be provided in both written and verbal form.
- Lecturers should remember to pay attention to ‘signposting’ e.g. statement a start of each lecture of what is being covered; tracking progression throughout lecture; summary of main teaching points at end.
- All staff should make particular effort to put new vocabulary into context and explain new concepts. It is helpful to provide some repetition.

Source URL (modified on 29-09-15): https://teaching15-16.eng.cam.ac.uk/content/part-iib-guide